

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NORTH DAKOTA
NORTHWESTERN DIVISION

Energy Heating, LLC, an Idaho limited liability company; Rocky Mountain Oilfield Services, LLC, an Idaho limited liability company,

Plaintiffs/Counterclaim Defendants,

vs.

Heat On-The-Fly, LLC, a Louisiana limited liability company, and Super Heaters North Dakota, a North Dakota limited liability company,

Defendants,

and

Heat On-The-Fly, LLC, a Louisiana limited liability company,

Counterclaimant.

Heat On-The-Fly, LLC, a Louisiana limited liability company,

Third-Party Plaintiff/Counterclaim Defendant,

vs.

Marathon Oil Corporation,

Third-Party Defendant/
Counterclaimant.

Civil Case No. 4:13-cv-10

**MEMORANDUM OPINION AND
ORDER GRANTING
PLAINTIFFS/THIRD-PARTY
DEFENDANT'S MOTIONS FOR
PARTIAL SUMMARY JUDGMENT
OF INVALIDITY AND DENYING
DEFENDANTS' MOTION TO
DISMISS INEQUITABLE
CONDUCT CLAIMS**

1. Introduction and Summary of Decision

On July 7, 2014, the court filed its Final Claim Construction Order.¹ Since that time,

¹ Doc. #202.

numerous requests to amend pleadings, extend deadlines, and file additional briefs have been made. Having reviewed the status of the pleadings and the pending motions, the claim of patent invalidity due to obviousness is fully briefed and ripe for determination.² Upon careful consideration, the court finds that Patent No. 8,171,993 (“the ‘993 Patent” or “accused patent”) is invalid as obvious. Plaintiffs Energy Heating and Rocky Mountain (collectively “Energy Heating”) and Third-Party Defendant Marathon Oil’s motions for summary judgment of invalidity are **GRANTED**. Defendant Heat On-the Fly’s (“HOTF”) cross-motion for summary judgment is **DENIED**. In light of the substantial briefing and the straightforward issues raised, expenditure of additional time and resources by the parties would not be of assistance to the court. HOTF’s motion for a hearing³ is **DENIED**.

Energy Heating and Marathon Oil have also alleged inequitable conduct claims. HOTF moves to dismiss the second amended complaint as well as the third-party counterclaims for failure to state a claim.⁴ In the event that the court’s order finding the patent invalid is reversed, the court finds that Energy Heating and Marathon Oil have raised a plausible claim for inequitable conduct. HOTF’s motion to dismiss the second amended complaint and third-party counterclaims for failure to state a claim and to strike affirmative defenses is **DENIED**.

2. Procedural Background

The subject invention involves superheated water mixing with continuously flowing source water to provided “on-demand” heated water for use in hydraulic fracing. HOTF is

² Docs. #121, 129 & 138.

³ Doc. #346

⁴ Doc. #304.

a licensing company formed in 2010 for the purpose of licensing the water heating method used by Super Heaters. HOTF has accused Energy Heating and Rocky Mountain, joint venturers, of using allegedly infringing portable water heaters. Energy Heating prophylactically brought this action for a judicial determination to counter infringement accusations.

It is well established that “[t]he essential attribute of a patent grant is that it provides a right to exclude competitors from infringing the patent.”⁵ On the other hand, a patent holder with an invalid patent ought not be allowed to delay the day of reckoning thereby continuing to extract an unfair competitive advantage or otherwise capitalize on the error. The court acknowledges that the latest round of *ex parte* reexamination proceedings are ongoing. Nonetheless, in light of the differing standards employed by the PTO and a district court⁶ coupled with the substantial time and resources already invested in this litigation, the interests of justice dictate that this court proceed with a judicial determination on the merits of Energy Heating and Marathon Oil’s invalidity claims.

3. Invention Background and Prior Claim Construction

Traditionally, fracing systems used preheated water from large standing tanks. The inefficiency is apparent - heated water left standing cools rapidly.⁷ Businesses involved in

⁵ Acumed LLC v. Stryker Corp., 551 F.3d 1323, 1328 (Fed. Cir. 2008) (citing 35 U.S.C. § 154(a)(1)).

⁶ Xerox Corp. v. 3Com Corp., 69 F.Supp.2d 404, (W.D.N.Y. 1999) (a patent is presumed valid in the district court and the party asserting invalidity must prove the facts, by clear and convincing evidence, to establish invalidity, while in a reexamination proceeding before the PTO there is no presumption of validity and there must only be a preponderance of the evidence to show nonpatentability before the PTO may reject the patent claims).

⁷ The ‘993 Patent lists as an example, due to thermal loss, if the required water temperature is 70° degrees, each standing water tank has to be heated to at least 90°-120° degrees in order to be at optimal temperature when needed.

the fracking industry sought to save money and increase efficiency by providing heated water “on demand” for use in hydraulic fracking. In general, the ‘993 Patent claims an invention that does just that – it is a method and apparatus for the continuous preparation of heated water flow for use in hydraulic fracking.⁸

Energy Heating and Marathon Oil proclaim that the biggest problem with providing continuously heated water “on demand” in the fracking industry was the lack of a water heater powerful enough to provide the necessary volume. The ‘993 Patent notes that “suitable heating units” can be fabricated or are commercially available through manufacturers such as Rush Sales Company, Chandler Manufacturing, and Vita International.⁹ Indisputably, the accused patent does not improve upon the water heaters that were available at the time of the patent application. The subject invention’s significance is limited to the ability to heat “on demand” a large volume of water for use in hydraulic fracking and perhaps other remote locations.

HOTF asserts the ‘993 Patent describes and claims “a novel method, system, and apparatus” for heating water “on demand” thereby eliminating frac tanks and reducing expenses. Energy Heating and Marathon Oil counter that the water heating process contained in the patent is nothing more than a larger application of “on demand” methods used for heating water in residential baths, showers, dishwashers, and swimming pools. In response, HOTF raises a number of “facts” that it believes distinguishes the accused patent from prior art, including the ability to heat a large volume of water, the combination of flowlines connecting the heating unit to a mixer, a specially designed mixer, and the

⁸ Doc. #1-1, col. 1, lines 28-30.

⁹ Doc. #1-1, col. 5, lines 8-10.

portability of the system.

Following a Markman hearing, the court construed six claim terms - substantially continuously, much greater, transportable heating apparatus, transportable heating apparatus is a wheeled vehicle, mixer, and turbulent flow.¹⁰ The most contentious issue focused on one aspect of the subject invention - the mixer. The court has construed the claim term mixer as follows: a component consisting of inlets for receiving cool/cold water and heated water into a tubular body, an internal structure to create or cause turbulent mixing (the flow of fluid in which the velocity fluctuates randomly and irregularly with continual mixing), and an outlet for discharging a mixture of the cool/cold water and heated water. With this background in mind, the court turns to the legal issue of whether the accused patent is invalid as obvious.

4. Analysis

Summary Judgment Standard/Invalidity Due to Obviousness

“Summary judgment is appropriate when, drawing all justifiable inferences in the nonmovant’s favor, there exists no genuine issue of material fact and the movant is entitled to judgment as a matter of law.”¹¹

A patent is presumed valid.¹² The party asserting invalidity bears the burden of establishing, by clear and convincing evidence, that the patent is invalid.¹³ Moreover, a

¹⁰ Doc. #202.

¹¹ Transocean Offshore Deepwater Drilling, Inc. v. Maersk Contractors USA, Inc., 617 F.3d 1296, 1302 (Fed. Cir. 2010) (citing Fed.R.Civ.P. 56(c); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255 (1986)).

¹² 25 U.S.C. § 282.

¹³ Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 1359 (Fed. Cir. 2007).

party asserting invalidity has “the added burden of overcoming deference that is due to a qualified government agency presumed to have properly done its job” if only prior art considered by the PTO examiner is relied upon in the submissions to the court.¹⁴

The ‘993 Patent has been the subject of multiple requests for *ex parte* reexamination. Twice the PTO has determined the asserted claims in the ‘993 Patent are patentable. In February 2015, however, the PTO examiner rejected all claims in the ‘993 Patent as obvious. HOTF intends to appeal the examiner’s findings. As of the date of this Order, there has been no final PTO decision on the latest request for *ex parte* reexamination.

The parties disagree on the prior art relied upon by the examiner as well as the weight the court should give to the reexamination proceedings. As to the first dispute, HOTF believes that the examiner’s rejections are based on a primary reference, Sullivan, and varying secondary references. Energy Heating contends that the examiner found the Sullivan reference rendered all of the claims obvious, but did not rely solely on Sullivan. With regard to the second dispute, on the one end of the spectrum is HOTF’s contention that this court ought to give no weight to the examiner’s decision and on the other end is Energy Heating’s concession that the interim decision is not controlling but requests that the court not wholly ignore it.

“A court is not bound by the PTO’s actions and must make its own independent determination of patent validity.”¹⁵ Due to the conflicting decisions reached by the PTO, the ongoing nature of the latest PTO proceedings, the parties’ disputes over what constitutes

¹⁴ McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1353 (Fed. Cir. 2001) (quoting American Hoist & Derrick Co. v. Sowa & Sons, Inc., 725 F.2d 1350, 1359 (Fed. Cir. 1984)).

¹⁵ Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1322 (Fed. Cir. 2005).

relevant prior art, and the differing standards of proof in the two forums, the court reviews Energy Heating and Marathon Oil's invalidity contentions without particular regard to any of the PTO's decisions.¹⁶

Turning now to the invalidity contentions, a patent is invalid due to obviousness if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.¹⁷

When determining "the relevant art for purposes of addressing issues of patent validity, the court must look to the nature of the problem confronting the inventor."¹⁸ The relevant prior art encompasses "not only the field of the inventor's endeavor but also any analogous art."¹⁹ A reference not within the "inventor's field of endeavor" must be "reasonably pertinent to the particular problem confronting the inventor."²⁰ "A reference is reasonably pertinent, if, even though it may be in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering the problem."²¹

Patent validity is determined on a claim-by-claim basis.²² Whether a patent is invalid

¹⁶ CreAgri, Inc. v. PinnacLife, Inc., 2013 WL 6673676, *5 (N.D. Cal. 2013).

¹⁷ 35 U.S.C. § 103(a) (pre-AIA).

¹⁸ Verizon Servs. Corp. v. Cox Fibernet Va., Inc., 602 F.3d 1325, 1338 (Fed. Cir. 2010) (citation omitted).

¹⁹ In re GPAC Inc., 57 F.3d 1573, 1577-78 (Fed. Cir. 1995) (citation omitted).

²⁰ Id. at 1578.

²¹ Id. (citation omitted).

²² 35 U.S.C. § 282.

as obvious is a legal determination based on underlying factual determinations.²³ “Those underlying determinations of fact relate to ‘the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, and any relevant secondary considerations, such as commercial success, long-felt need, and the failure of others.’”²⁴ These four underlying fact questions are commonly referred to as the Graham²⁵ factors.

Summary judgment of obviousness is appropriate when “the content of the prior art, the scope of the patent claim, and the level of ordinary skill in the art are not in material dispute, and the obviousness of the claim is apparent in light of these factors.”²⁶ When making this determination, “a district court must *always* consider any objective evidence of nonobviousness presented in a case.”²⁷ Although almost every fact and issue is in dispute in this litigation, for the reasons explained below there, the accused patent’s obviousness is apparent, rendering this case appropriate for summary judgment.

1. *The Scope and Content of Relevant Prior Art*

The parties dispute every step of the invalidity analysis, beginning with the relevant prior art. Prior art includes knowledge that is publicly known, used by others, or available on the date of invention to a person of ordinary skill in an art, including what would be

²³ Geo. M. Martin Co. v. Alliance Machine Systems Intern. LLC, 618 F.3d 1294, 1300 (Fed. Cir. 2010) (citing Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH, 139 F.3d 877, 881 (Fed. Cir. 1998)).

²⁴ Id. (quoting Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1310 (Fed. Cir. 2009)).

²⁵ Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17-18 (1966).

²⁶ KSR Intern. Co. v. Teleflex Inc., 550 U.S. 398, 427 (2007).

²⁷ Transocean Offshore Deepwater Drilling, Inc. v. Maersk Contractors USA, Inc., 617 F.3d 1296, 1305 (Fed. Cir. 2010) (emphasis in original).

obvious from that knowledge.²⁸ Ascertaining the scope of the prior art requires an examination of not only the field of the inventor's endeavor but also the particular problem with which the inventor was involved at the time the invention was made.²⁹

The '993 Patent specification illustrates well known prior art for a traditional water heating system used in fracing.³⁰ That process is generally described as follows: (1) cool or cold source is water pumped into numerous tanks (water tanks) through a flow line; (2) trucks carrying water heaters connect to the water tanks through a series of inlets, outlets, and flow lines; (3) designated source water from the tanks is sent to the water heater tanks and is circulated through a heating unit to raise the temperature of the water to a preset level; (4) hot water is then returned to the water tanks through flow lines where it mixes with cooler source water in the tanks; (5) the mixed water is temporarily stored in tanks until needed; (6) when the fracing process begins, the water flows through flow lines from the tanks to a second mixer where proppants are added; and (7) lastly, a pumper truck pumps the heated water and proppants through flow lines into the wellbore for use in the extraction process.³¹

At the time of the accused patent's application, thermal loss was a widely known inefficiency in this traditional water heating/storage method.³² While HOTF focuses on the

²⁸ Siemens v. Seagate Technology, No. SACV 06-788-JVS (ANx), 2008 WL 9028522 (C.D. Cal. Sept. 23, 2008) (citations omitted).

²⁹ Monarch Knitting Mach. Corp. v. Sulver Morat GmbH, 139 F.3d 877, 881 (Fed.Cir. 1998) (quotations and citations omitted).

³⁰ Doc. #1-1, col. 2, lines 32-36; col. 6, lines 44-45; Fig. 5.

³¹ Id. at col. 2, lines 18-23.

³² Id. at col. 2, lines 24-35.

fracing industry, the field of the inventor's endeavor pertained to heating water. The particular problem sought to be solved was a more efficient method of providing a large volume of continuously heated water. It was apparent that one way to solve the problem was to discover a way to eliminate water storage tanks and create an "on demand" water heating system mobile and powerful enough to heat thousands of gallons of water per minute.

In addition to the "common and known methods"³³ of providing heated water for use in the fracing process, the scope of the relevant prior art includes tankless water heating methods used for residential baths, showers, dishwashers,³⁴ and swimming pools.³⁵ The background section of the '993 Patent explicitly disclosed patents for heating units and methods for use in home.³⁶ While HOTF contends that the technology and methods used in residential water heating or swimming pool water heating are not easily translatable to the hydraulic fracing field and are not analogous prior art, these inventions are reasonably pertinent, as they undoubtedly teach about the manners and methods of "on demand" water heating - the particular problem sought to be solved.³⁷

Beginning with the swimming pool application, the Daughirda patent issued in 1972

³³ Id. at col. 2, line 18.

³⁴ See e.g. U.S. Patent 7,477,836 (White) which teaches a tankless water heater with a sensitive flow sensor that has limited components exposed to the water so as to reduce corrosion and contaminate build-up.

³⁵ See U.S. Patent 3,685,542 (Daughirda) which provides for a fitting to divert a portion of water from a main flow to a heater and is later mixed with the unheated water for addition to the pool.

³⁶ Doc. #1-1, col. 1, lines 56-59.

³⁷ The scope of relevant prior art is defined as encompassing that which is "reasonably pertinent to the particular problem with which the inventor was involved." Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535 (Fed. Cir. 1983).

involved “[a]n improved tee shaped fitting for the heating system of a swimming pool.”³⁸ Daughirda also claimed “equivalent constructions for purposes other than being included as part of a water heating system and constructions having shapes other than a tee shape.”³⁹ The improvement related to a fitting that enabled flowing water to bypass a heater,⁴⁰ noting that the diameters of the passages and/or openings could be varied depending on the application and amount of water to be diverted.⁴¹ The claimed fitting included means to measure the temperature of an inlet flow of fluid and an outlet flow of heated fluid.⁴² In its simplest terms, the object of the Daughirda patent was to “provide a simple and economical apparatus or fitting for diverting an amount of fluid to a heating tank”⁴³ and then reintroducing the heated water to the supply water. Much like the accused patent, Daughirda teaches the use of fittings and inlets and outlets as a way to heat a portion of supply water and then reintroduce the heated water to the cool or cold water supply to create warm water for a particular application.

Turning to other relevant prior art, the Ranger patent issued in 1993 relates to a domestic hot water supply system capable of delivering a desired water temperature to multiple terminals independent of water demand.⁴⁴ It teaches a hot water supply system

³⁸ Doc. #123-3, p.2, Abstract.

³⁹ Doc. #123-3, col. 4, lines 35-43.

⁴⁰ Doc. #123-3, col. 1, lines 4-6.

⁴¹ Doc. #123-3, col. 2, lines 52-55.

⁴² Doc. #123-3, col. 1, lines 56-58.

⁴³ Doc. #123-3, col. 1, lines 45-47.

⁴⁴ Doc. #129-9, Patent No. 5,183,029.

involving a heating unit with a cold water intake and a delivery outlet; a cold water supply pipe connected to the intake; a hot water delivery pipe connected to the outlet for delivering hot water to one or more terminals; and branch pipes with valves connected to (a) the cold water supply for delivering cold water directly to user terminals and (b) the hot water delivery pipe for delivering hot water to user terminals.⁴⁵ This invention eliminated hot water storage tanks while through a series of piping and valves directs the desired hot or cold water to various user terminals, including cold water taps, shower heads, toilet fittings, washers, dishwashers, and the like.⁴⁶

Relevant prior art also includes Patent No. 7,477,836 B2 (White III) issued on January 13, 2009.⁴⁷ The White III patent pertains generally to electrically powered tankless water heaters. White III acknowledged several other patents covering various types of tankless water heater systems.⁴⁸ The White III patent, unlike other tankless systems, involves a water heater system with a sensitive water flow detector. Like other tankless systems, a series of pipes and inlets and outlets connects the supply water and at least one hot water spigot. The White III patent teaches a tankless water heating system where in response to the flow of water, a change in the output of the sensitive flow sensor energizes

⁴⁵ Id.

⁴⁶ Id.

⁴⁷ Doc. #132-2.

⁴⁸ Doc. #132-2, col. 1, lines 45-67; col. 2, lines 9 - tankless water heaters involving: Patent No. 3,351,739 (Echman) staged energization of electrical heating elements and a high temperature cutout switch; Patent No. 3,795,789 (Malzoni) a flow switch and electric heating elements; Patent No. 4,604,515 (Davidson) and No. 4,638,147 (Dytch) solid state switch to control electrical current to heating elements; Patent No. 5,479,558 (White, Jr.) a flow switch with an arm and ball joint requiring significant water flow to energize the switch; Patent No. 6,552,283 (Cabrera) flow switch with floating magnetic balls; and GB 471,730 (Shepherd) flow switch with a plunger in a cylinder.

the electric water heating elements to heat the water. The White III patent and references therein demonstrate the number of methods available to connect supply water to a heating unit and heat water while eliminating water storage tanks.

2. *Level of Ordinary Skill in the Pertinent Art*

A person having ordinary skill in the art refers to “a hypothetical person who is presumed to be aware of all the pertinent prior art.”⁴⁹ The determinative factor is not the inventor’s skill.⁵⁰ Rather, factors to be considered in determining the level of skill include:

type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.⁵¹

HOTF contends that the level of skill in the art requires knowledge of the fracing industry. The court finds that a skilled artisan as it relates to the accused patent does not need to know much about the actual fracing operations. Instead, with regard to the subject invention, a skilled artisan is someone familiar with heating water “on demand” and is aware of the required flow rates, volume, and temperature demands for hydraulic fracing.

3. *Differences Between Prior Art and the Claimed Invention*

The ‘993 Patent identifies 99 claims.⁵² Claim 26 is representative of the subject invention:

26. An oil well hydraulic fracturing system, comprising:

⁴⁹ Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc., 807 F.2d 955, 962 (Fed. Cir. 1986).

⁵⁰ Id.

⁵¹ Id. (citing Environmental Designs, Ltd. v. Union Oil Co. of California, 713 F.2d 693, 696 (Fed. Cir. 1983)).

⁵² Doc. #1-1, pp. 20-24.

- a) a transportable heating apparatus that heats water to a temperature of at least 40 degrees F. (4.4 degrees C);
- b) a source of cool or cold water at about ambient temperature;
- c) a mixer having a first inlet and a first outlet;
- d) a second inlet that enables heated water to enter the mixer;
- e) a second outlet that enables removal of water from the mixer upstream of the second inlet;
- f) a first flowline that transmits heated water between the heater, and the second inlet;
- g) a second flowline that transmits water between the second outlet and the heater, the second flowline being upstream of the second inlet; and
- h) a mixing tank that is receptive of a flow of a mix of cool or cold and heated water from the mixer, said tank enabling a proppant to be mixed with the mix of cool or cold and heated water that is discharged from the first outlet.⁵³

The other asserted independent claims are substantially the same as claim 26. The variations do not affect the court's invalidity analysis. Likewise, the dependent claims, include such things as, for instance, the temperature of the supply water,⁵⁴ the heated water,⁵⁵ or the angle at which the heated water enters the mixer⁵⁶ or discharges from the

⁵³ Doc. #1-1, col. 14, lines 11-30.

⁵⁴ Doc. #1-1, col. 13, lines 1-2 ("7. . . . the stream of cool or cold water has a temperature of above freezing.").

⁵⁵ Doc. #1-1, col. 13, lines 3-11 ("8. . . . the heated water has a temperature of between about 40 and 120 degrees F. (4.4 and 48.9 degrees C.); "9. . . . the heated water has a temperature of between about 40 and 150 degrees F. (4.4 and 65.6 degrees C.): "10. . . . the heated water has a temperature of between about 40 and 200 degrees F. (4.4 and 93.3 degrees C.).

⁵⁶ Doc. #1-1, col. 14, lines 35-37.

mixer.⁵⁷ The additions or limitations found in the dependent claims do not affect the court's invalidity analysis.

Having studied the relevant prior art and the '993 Patent, the similarities are notable: (1) water is heated without utilizing hot water storage tanks; (2) the heating systems involve diverting a portion of supply water to a heater; (3) water enters through inlets and discharges through outlets; (4) the water flows through piping; (5) supply water is mixed with heated water to obtain a desired temperature; and (6) heated water is available "on demand." On the other hand, the differences between the prior art and the subject invention are finite: (1) the '993 Patent involves a transportable heating system, i.e. the heaters are located on trucks; (2) the '993 Patent claims a "mixer"; (3) the '993 Patent refers to "flowlines" instead of piping; and (4) the '993 Patent recommends a heater capable of heating a large volume of water.

Although combining known elements is useful in an obviousness analysis, the Supreme Court has warned that courts must use a "flexible approach" when determining whether the subject invention is more than the predictable use of prior art elements according to their established functions.⁵⁸ Nonetheless, the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.⁵⁹

The parties have submitted hundreds of pages of documents, ranging from various legal and factual arguments to excerpts from the PTO proceedings. According to the

⁵⁷ Doc. #1-1, col. 14, lines 38-40.

⁵⁸ KRS Intern. Co., 550 U.S. at 415.

⁵⁹ Id. at 416.

inventor's own words, the problem solved by the '993 Patent was the capability to heat large volumes of water in "the middle of nowhere." In solving the problem, the '993 Patent added to prior art mobility and a powerful heater to accommodate large volumes of water. The use of inlets, outlets, and piping/flowlines to connect the supply water with heating unit(s) were known methods. The accused patent claims all sorts of variations with regard to the placement and angles of inlets and outlets for water. Nothing about the arrangements of inlets/outlets in the accused patent sets it apart from other known methods whereby a portion of supply water is diverted to a heater and then reintroduced.

Another way HOTF attempts to distinguish the accused patent from prior art is by reliance on the length of the pipes, the volume of water heated, and the adaptability of different configurations for each particular frac site. The fact that the pipes are longer and the end use for the water is different - pumped into the ground rather than into swimming pools or houses - is of little importance when analyzing the '993 Patent claims. The only notable difference that is not patently plain to one skilled in the art is the "mixer" claimed in the accused patent. This "mixer" according to the inventor must necessarily be unique because he asked a skilled welder to build him one but he "got the angles and all that all messed up and it wasn't worth fixing."⁶⁰ As explained in the following paragraphs, the claimed mixer is a fancy term for an event that happens in all tankless water heating systems where cold water is continuously introduced to heated water in a confined space.

In order to direct the flow of water, prior art teaches about lips, sensors, tee fittings, various types of flow switches, solid state switches, and the like. These methods allow

⁶⁰ Doc. #123-4, Hefley dep. pp. 139-140.

supply water to mix with heated water. They also allow ambient supply water to bypass the heating unit. The accused patent claims a mixer that other patents do not specifically claim. The mixer, as it relates to the subject invention, is a component consisting of inlets for receiving cool/cold water and heated water into a tubular body, an internal structure to create or cause turbulent mixing (the flow of fluid in which the velocity fluctuates randomly and irregularly with continual mixing), and an outlet for discharging a mixture of the cool/cold water and heated water.

One with the lowest level of skill in the art would not find the claimed mixer significant or unique in a tankless water heating system.⁶¹ When introduced to each other continuously in a confined space, cold and hot water mix. By its very nature, heating water “on demand” involves a continuous flow of water. As a result, one need not be concerned about density differences between hot and cold water, as the continuous flow inherent in an “on demand” system keeps the water molecules from settling or rising. The illustrations contained in the ‘993 Patent demonstrate that the inventor simply eliminated the necessity of water storage tanks by use of a designated plumbing fitting for continuously mixing hot and cold water. In short, HOTF has not identified anything unique or distinctive about the manner in which heated and cold water mix in the subject invention. The claimed mixer does not improve upon or distinguish this heating method from other water heating systems. It simply accommodates more water at a higher rate and with more pressure than prior art.

⁶¹ See *Innovention Toys, LLC v. MGA Entertainment, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) (determining the level of skill in the art is unnecessary when “an invention would have been obvious to one having the lowest level of skill, i.e., a layperson, because what is obvious to a layperson is necessarily obvious to one with a higher level of skill in the field of the invention.”).

“Through the lens of one of ordinary skill in the art, even when all claim limitations are found in prior art references, the fact-finder must not only determine what the prior art teaches, but whether prior art teaches away from the claimed invention and whether there is motivation to combine teachings from separate references.”⁶² The Daughirda patent included a fitting with a lip to divert water and reintroduce the heated water to other supply water. Ranger teaches a hot water supply system involving a heating unit with a cold water intake and a delivery outlet; a cold water supply pipe connected to the intake; a hot water delivery pipe connected to the outlet for delivering hot water to one or more terminals; and branch pipes for delivering cold or hot water.

It would have been obvious to a skilled artisan to make the heating apparatus transportable in order to provide the fluid at multiple or different locations with the same equipment. Likewise, it would have been obvious to a transport truck(s) with water in order to easily move fluid to a site. It would have been obvious to a skilled artisan to utilize a t-fitting or similar device to control the fluid through the system. In order to enhance the desired temperature, it would have been obvious to utilize additional heaters and mixers.

While none of prior art specifically addresses the volume of water used in fracing operations, the court finds that a skilled artisan, using ordinary skill and common sense, would be able to pursue the known options within his or her technical grasp and successfully develop a portable “on demand” water heating system for use in hydraulic fracing.

All of the components of the identified claims are apparent individually or in varying combinations in the prior art. Moreover, in examining the interrelated teachings of the

⁶² Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 655 F.3d 1364, 1374-75 (Fed. Cir. 2011).

relevant patents, combining the known elements in this particular fashion would have been obvious to a skilled artisan at the time the subject invention was made. The claimed invention is no more than the predictable use of prior art elements.⁶³

4. *Secondary Considerations*

Secondary considerations relevant to obviousness include: (1) the commercial success of the patented invention; (2) whether it met long-felt but unsolved needs and, relatedly, whether others tried but failed to solve the problem; (3) whether the subject invention gave unexpected results; and (4) whether the patented invention received industry acclaim.⁶⁴ While in some situations secondary considerations might be the most probative evidence regarding obviousness because the invention's significance is sometimes better measured in the marketplace than in the courtroom,⁶⁵ this is not one of those cases.

There is no evidence of industry acclaim or unexpected results. HOTF's asserted commercial success is subject to discounting because (1) a nexus between the commercial success and the claimed features is required;⁶⁶ and (2) HOTF has proclaimed such a broad reading of the '993 Patent prior to and during this litigation that it is highly probable it has accounted for revenues generated by threatening and scaring off non-infringing competitors. The inventor acknowledges the '993 Patent was triggered by a third-party's development of more powerful heaters, the subject of a different patent, that generated enough heat and was fast enough to heat a high volume of water on demand. The invention

⁶³ See C.W. Zumbiel Co. v. Kappos, 702 F.3d 1371, 1380 (Fed. Cir. 2012).

⁶⁴ See Eli Lilly and Co. v. Zenith Goldline Pharmaceuticals, Inc., 471 F.3d 1369, 1380 (Fed. Cir. 2006).

⁶⁵ Cont'l CanCo. USA, Inc. v. Monsanto Co., 948 F.2d 1264, 1273 (Fed.Cir. 1991).

⁶⁶ Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1130 (Fed. Cir. 2000).

of a powerful enough heater is directly linked to fulfilling a long-felt need and the success of the subject invention. In light of these considerations, HOTF's evidence of secondary considerations does not overwhelm the other substantial evidence of obviousness.

5. Decision

A review of the evidence in the light most favorable to HOTF reveals no genuine issues of material fact. The '993 Patent is invalid as obvious in light of prior art. Energy Heating and Marathon Oil's motions for summary judgment of invalidity are **GRANTED**.⁶⁷ HOTF's motion for summary judgment that the patent is not invalid and related motion for a hearing are **DENIED**.⁶⁸ The Clerk is directed to enter judgment in favor of the plaintiffs.

6. Motion to Dismiss Inequitable Conduct Claims

HOTF moves the court to dismiss the inequitable conduct claims asserted by the plaintiffs and third-party defendants.⁶⁹ It asserts that the inequitable conduct claims are subject to dismissal for failure to plead with particularity or specificity. Marathon Oil and Energy Heating oppose the motion on the grounds that HOTF applies the wrong pleading standard and improperly requests that the court accept factual allegations that contradict the pleadings.⁷⁰

Inequitable conduct is a judge-made doctrine that, if proved, bars enforcement of a patent.⁷¹ To prevail, the accused infringer must prove, by clear and convincing evidence, that the patent applicant misrepresented or omitted material information with the specific

⁶⁷ Docs. #121 & 129.

⁶⁸ Docs. #138 & 346.

⁶⁹ Doc. #304.

⁷⁰ Docs. #326 & 327.

⁷¹ Therasense, Inc. v. Becton, Dickinson and Co., 649 F.3d 1276, 1285 (Fed. Cir. 2011).

intent to deceive the PTO.⁷² If the accused infringer meets its burden, the district court then weighs the equities to determine whether the conduct before the PTO warrants rendering the entire patent unenforceable.⁷³

HOTF incorrectly applies the burden of proof for the merits of the claim at the pleading stage. In a motion under Fed.R.Civ.P. 12(b)(6), courts do not weigh the evidence or determine whether the non-moving party has met its ultimate burden of proof. Contrary to HOTF's suggestion, Rule 12(b)(6) relief is not predicated on a likelihood of success analysis but on a determination as to whether the claim is plausible such that the claimant is entitled to offer evidence to support the claims.⁷⁴ Relief under Rule 12(b)(6) lies only if it is clear that no relief can be granted under any facts that could be proven consistent with the complaint.⁷⁵

A party alleging inequitable conduct must plead the claim with the particularity required under Fed.R.Civ. P. 9(b).⁷⁶ Assuming the facts pled as true, Energy Heating and Marathon Oil have alleged facts from which a court can reasonably infer the inventor intentionally deceived the USPTO. They have not only plead facts alleging the inventor withheld material prior art, but also that he was acutely aware that the prior art existed, that he knew it was material, and that he intentionally withheld information from the PTO because he knew the prior sales and public uses would be fatal to his patent application. The pleadings adequately set forth the "who, what, when, where, and how" of the alleged

⁷² Id. at 1287.

⁷³ Id.

⁷⁴ Handeen v. Lemaire, 112 F.3d 1339, 1347 (8th Cir. 1997).

⁷⁵ McMorrow v. Little, 109 F.3d 432, 434 (8th Cir. 1997).

⁷⁶ Exergen Corp. v. Wal-Mart Stores, Inc., 575 F.3d 1312 (Fed. Cir. 2009)

inequitable conduct. Because Energy Heating and Marathon Oil have pled sufficient facts from which the court could reasonably infer an intent to deceive the PTO, HOTF's motion to dismiss the inequitable conduct claims in the second amended complaint and to strike the affirmative defenses⁷⁷ is **DENIED**.

7. Other Pending Motions

Because the '993 Patent has been found to be invalid, the court declines to address the motion for summary judgment of non-infringement,⁷⁸ the motion for invalidity pursuant to 35 U.S.C. § 102(b),⁷⁹ and the motions and request for a hearing on invalidity for indefiniteness.⁸⁰

IT IS SO ORDERED.

LET JUDGMENT BE ENTERED ACCORDINGLY.

Dated this 31st day of March, 2015.

/s/ Ralph R. Erickson
Ralph R. Erickson, Chief Judge
United States District Court

⁷⁷ Doc. 304.

⁷⁸ Doc. #189.

⁷⁹ Doc. #351.

⁸⁰ Docs. #272, 275 & 290.